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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,529	09/30/2003	Jerrell Hein	026-0036	6093
22120 7590 06/29/2007 ZAGORIN O'BRIEN GRAHAM LLP 7600B NORTH CAPITAL OF TEXAS HIGHWAY SUITE 350 AUSTIN, TX 78731			EXAMINER FRANKLIN, RICHARD B	
			ART UNIT 2181	PAPER NUMBER
			MAIL DATE 06/29/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/675,529

Applicant(s)

HEIN, JERRELL

Examiner

Richard Franklin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-11, 13-20, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-11, 13-20, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 3, 5 – 11, 13 – 20, and 22 – 23 are pending.

Response to Arguments

2. Applicant's arguments filed 08 May 2007 have been fully considered but they are not persuasive.

Applicant has argued that the relied upon references, US Patent No. 5,451,912 (hereinafter Torode) in combination with US Patent No. 6,882,214 (hereinafter Spenea), fails to teach that the permanently converting the terminal from a first mode of operation in which serial communications are received over the terminal into a second mode of operation in which the terminal functions to selectively enable an output according to a voltage value on the terminal (See remarks filed 30 April 2007; Page 6 Paragraph 4, Page 7 Paragraph 2) as required by currently amended claim 1 and claim 19. Applicant states that Torode does not teach receiving a command for a permanent conversion to the second mode of operation and that Spenea does not teach a permanent conversion. However, the Examiner respectfully disagrees. Torode teaches that a pin is convertible from a first mode of operation to a second mode of operation, but does not teach wherein the mode change is permanent. However, Spenea teaches converting a pin to a second mode of operation by receiving a programming current causing a fuse to be blown. The command to permanently convert from the first mode to the second mode of the present invention is taught by the programming current of Spenea. The fuse being blown in Spenea teaches the permanent conversion of the present invention.

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Blowing a fuse is a way to permanently change a circuit, as it cannot be repaired (See "Microsoft Computer Dictionary Fifth Edition"; Page 229 "fuse"). Therefore, Torode in combination with Spenea teach all the limitations of the claimed invention.

Reliance upon "Microsoft Computer Dictionary Fifth Edition" is used ONLY as extrinsic evidence to show that blowing a fuse is a permanent change and is not intended to be or suggest a rejection under 35 USC 103(a) using the reference.

Applicant has argued that the relied upon references, Torode in combination with Spenea and US Patent No. 6,670,852 (hereinafter Hauck), fails to teach a dedicated programming pin over which serial communications and a calibration clock are received (See remarks filed 30 April 2007; Page 6 Paragraph 6). Applicant also states that Torode teaches away from the addition of a dedicated programming pin. The Examiner respectfully disagrees. Torode only teaches an embodiment that does not have a dedicated programming pin. Torode does not teach that a dedicated programming pin is undesirable for a specific reason, and only teaches that such a pin is not required. Therefore, there is no teaching away from a dedicated programming pin. Also, Torode teaches wherein a programming pin can receive serial communications and a calibration clock. This teaching in combination with the dedicated programming pin of Hauck teaches the dedicated programming pin as claimed in currently amended claim 10. Therefore, the Examiner maintains the rejection as presented in the previous office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 3, 5 – 9, 11, 13 – 20, and 22 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenea).

As per claims 1 and 19, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31). Torode also teaches wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation (Torode; Col 4 Lines 15 – 19).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables

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the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

As per claim 2, Spenea also teaches wherein once the terminal is converted to the second mode of operation, the first mode of operation for the terminal is permanently disabled (Spenea; Col 1 Lines 14 – 19).

As per claims 3, 13, and 20, Torode also teaches wherein a terminal configuration determining the mode of operation of the terminal is stored in a non-volatile memory (Torode; Figure 7 Item 740, Col 6 Lines 56 – 60).

As per claims 5 and 15, Torode also teaches wherein the serial communication received over the terminal in the first mode includes a command and write data (Torode; Figure 9, Col 7 Lines 10 – 13).

As per claims 6 and 16, Torode also teaches wherein the control logic distinguishes between a calibration clock and a serial communication received on the terminal (Torode; Col 8 Lines 11 – 13).

As per claims 7 and 17, Torode also teaches wherein the output enable function is for controlling the output of one or more clocks according to the voltage value of the terminal (Torode; Col 3 Lines 26 – 31).

As per claim 8, Torode also teaches wherein a controllable oscillator is coupled to receive a reference frequency and to supply a clock signal that is coupled to an output terminal that is controlled by the output enable terminal (Torode; Col 5 Lines 23 – 33); and a resonating device coupled to supply the reference frequency (Torode; Figures 2 – 4 Item 220).

As per claim 9, Torode also teaches wherein the terminal is on a package (Torode; Figure 1 Item 100, Col 2 Line 64 – Col 3 Line 25), the package including an integrated circuit (Torode; Figure 2 Item 210) and a resonating device (Torode; Figures 2 – 4 Item 220), the integrated circuit including the controllable oscillator (Torode; Figure 5 Item 560), and the resonating device being a crystal device (Torode; Figures 2 – 4 Item 220, Col 3 Lines 38 – 51).

As per claim 11, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

As per claim 14, Torode also teaches wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation (Torode; Col 4 Lines 15 – 19).

As per claim 18, Torode also teaches wherein the terminal is on a package, the package including an integrated circuit and a resonating device, the resonating device being one of a crystal device (Torode; Figure 1 Item 100).

As per claims 22 and 23, Spenea also teaches that converting from the first mode to the second mode is a part of a locking function (Spenea; Col 1 Lines 14 – 19). The locking function includes permanently disabling the first mode of operation (Spenea; Col 1 Lines 14 – 19) and therefore teaches that the second mode of operation is not accessible without permanently disabling the first mode of operation.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenea) and further in view of US Patent No. 6,670,852 (hereinafter Hauck).

As per claim 10, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines

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15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31). Torode also teaches wherein a terminal receives serial communications and a calibration clock (Torode; Col 8 Lines 17 – 20).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

Torode in combination with Spenea does not teach wherein the apparatus comprises a second terminal that functions as a dedicated programmable input/output terminal.

However, Hauck teaches a programmable crystal oscillator with a dedicated programming input terminal (Hauck; Figure 2 Item 120) that does not get converted into an output enable terminal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode in combination with Spenea to include the dedicated programming terminal because it allows for in-system tuning of the crystal oscillator by the user (Hauck; Col 6 Lines 15 – 16).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Franklin
Patent Examiner
Art Unit 2181



DONALD SPARKS
SUPERVISORY PATENT EXAMINER